

SEQUENCE LISTING.txt

SEQUENCE LISTING

<110> Novartis Forschungsstiftung, Zweigniederlassung Friedrich Miescher Institute for Biomedical Research

<120> Tenascin-W Compositions and Uses thereof

<130> 1-32411/P1/FMI

<140> WO 03/03150

<141> 2003 03 26

<150> GB0207224.7

<151> 2002 03 27

<160> 28

<170> PatentIn version 3.1

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<221> CDS

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Cys	Ser	Asn	Lys	Glu	Gln	Gln	Val	Thr	Val	Ser	His	Thr	Tyr	Lys	Ile	
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Asp	Val	Pro	Lys	Ser	Ala	Leu	Val	Gln	Val	Glu	Thr	Asp	Pro	Gln	Ser	
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Glu	Gln	Asn	Ile	Ile	Phe	Arg	His	Asn	Ile	Arg	Leu	Gln	Thr	Pro	Gln	
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Tyr 385	Gly	Pro	Leu	Thr	Gly 390	Gln	Glu	Val	Thr	Glu 395	Val	Thr	Val	Pro	Lys 400		
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Ser	Arg	Asp	Pro	Lys 405	Ser	Arg	Tyr	Asp	Ile 410	Thr	Gly	Leu	Gln	Pro 415	Gly		
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Thr	Glu	Tyr	Lys 420	Ile	Thr	Val	Val	Pro 425	Ile	Arg	Gly	Asp	Leu 430	Glu	Gly		
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Lys	Pro	Ile 435	Leu	Leu	Asn	Gly	Arg 440	Thr	Glu	Ile	Asp	Gly 445	Pro	Thr	Asn		
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cct Pro	gtt Val	cag Gln	gcc Ala	aac Asn 645	att Ile	gac Asp	agg Arg	tat Tyr	atg Met 650	gtg Val	agc Ser	tac Tyr	acc Thr	tct Ser 655	gcc Ala	1968
gat Asp	gga Gly	gag Glu	aca Thr 660	aga Arg	gag Glu	gtc Val	cca Pro	gtg Val 665	cct Pro	aag Lys	gag Glu	aag Lys	agc Ser 670	agt Ser	acc Thr	2016
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gcc Ala 690	cag Gln	aag Lys	ggg Gly	acc Thr	cag Gln	gag Glu 695	agc Ser	aga Arg	aag Lys	gcc Ala	aac Asn 700	acc Thr	aag Lys	gcc Ala	ccc Pro	2112
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cca Pro	gta Val	gag Glu	gct Ala 820	gac Asp	atc Ile	gac Asp	agg Arg	tat Tyr 825	gtg Val	gtg Val	cgc Arg	tac Tyr	acc Thr 830	tct Ser	gct Ala	2496
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aat aca gcc acc atc tcc tgg gac cca gtg cga gcc aac att gac agg Asn Thr Ala Thr Ile Ser Trp Asp Pro Val Arg Ala Asn Ile Asp Arg 900 905 910	2736
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Arg Ala 1160	Asn Glu Ser Ala Tyr 1170	Ala Val Tyr	
gat ttc ttc caa gtg gca tcc	agc aaa gag cgg tac	aag ctg tcg	3564
Asp Phe 1175	Ser Lys Glu Arg Tyr 1185	Lys Leu Ser	
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Val Gly 1190	Ala Gly Asp Ala Leu 1200	Thr Tyr His	
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Asn Gly 1205	Phe Asp Arg Asp Ser 1215	Asp Ile Ala	
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Leu Ser 1220	His His Gly Gly Trp 1230	Trp Tyr Lys	
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Asn Cys 1235	Asn Gly Lys Tyr Gly 1245	Glu Thr Lys	
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His Ser 1250	Glu Pro Trp Lys Gly 1260	His Glu Phe	
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Glu Gln Asn Ile Ile Phe Arg His Asn Ile Arg Leu Gln Thr Pro Gln
85 90 95
Lys Asn Cys Asp Leu Ala Asp Ser Val Gln Asp Leu Leu Ala Arg Met
100 105 110
Lys Lys Leu Glu Glu Glu Met Ala Glu Leu Lys Glu Gln Cys Asn Thr
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His Gly Thr Phe Leu Pro Glu Thr Cys Ser Cys His Cys Asp Gln Gly
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Trp Glu Gly Ala Asp Cys Asp Gln Pro Thr Cys Pro Gly Ala Cys Asn
165 170 175
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180 185 190
Val Gly Val Asp Cys Ala Tyr Ala Ala Cys Pro Gln Asp Cys Ser Gly
195 200 205
His Gly Val Cys Val Gln Gly Val Cys Gln Cys His Glu Asp Phe Thr
210 215 220
Ala Glu Asp Cys Ser Glu Gln Arg Cys Pro Gly Asp Cys Ser Gly Asn
225 230 235 240
Gly Phe Cys Asp Thr Gly Glu Cys Tyr Cys Glu Met Gly Phe Thr Gly
245 250 255
Pro Asp Cys Ser Gln Val Val Ala Pro Gln Gly Leu Gln Leu Leu Lys
260 265 270
Ser Thr Glu Asn Ser Leu Leu Val Ser Trp Glu Pro Ser Ser Glu Val
275 280 285
Asp Tyr Tyr Leu Leu Ser Tyr Tyr Pro Leu Gly Lys Glu Gln Ala Thr
290 295 300
Lys Gln Val Arg Val Pro Lys Glu Gln His Thr Tyr Asp Ile Thr Gly
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Leu Leu Pro Gly Thr Lys Tyr Ile Val Thr Leu Arg Asn Val Lys Lys
325 330 335

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Tyr Gly Pro Leu Thr Gly Gln Glu Val Thr Glu Val Thr Val Pro Lys
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Ser Arg Asp Pro Lys Ser Arg Tyr Asp Ile Thr Gly Leu Gln Pro Gly
      405      410      415
Thr Glu Tyr Lys Ile Thr Val Val Pro Ile Arg Gly Asp Leu Glu Gly
      420      425      430
Lys Pro Ile Leu Leu Asn Gly Arg Thr Glu Ile Asp Gly Pro Thr Asn
      435      440      445
Val Val Thr Asn Gln Val Thr Glu Asp Thr Ala Ser Val Ser Trp Asp
      450      455      460
Pro Val Arg Ala Asp Ile Asp Lys Tyr Val Val Arg Tyr Ile Ala Pro
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Asp Gly Glu Thr Lys Glu Lys Ala Val Pro Lys Asp Gln Ser Ser Thr
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Thr Glu Ile Asp Ser Pro Glu Asn Leu Val Thr Asp Arg Val Thr Glu
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Tyr Val Val Ser Tyr Thr Ser Val Asp Gly Glu Thr Lys Gln Val Pro
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Val Lys Lys Asp Gln Arg Ser Thr Val Leu Thr Gly Leu Ser Pro Gly
      580      585      590
Val Glu Tyr Lys Val Tyr Val Trp Ala Glu Lys Gly Asp Arg Glu Ser
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Lys Lys Ala Asn Thr Lys Ala Pro Thr Asp Ile Asp Ser Pro Lys Asn
      610      615      620
Leu Val Thr Asp Gln Val Thr Glu Asn Thr Leu Ser Val Ser Trp Asp
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Pro Val Gln Ala Asn Ile Asp Arg Tyr Met Val Ser Tyr Thr Ser Ala
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Asp Gly Glu Thr Arg Glu Val Pro Val Pro Lys Glu Lys Ser Ser Thr
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 770 775 780
 Arg Lys Ala Asn Thr Lys Ala Pro Thr Asp Ile Asp Ser Pro Lys Asn
 785 790 795 800
 Leu Val Thr Glu Gln Val Ala Glu Ser Thr Ala Thr Val Ser Trp Asp
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 Pro Val Glu Ala Asp Ile Asp Arg Tyr Val Val Arg Tyr Thr Ser Ala
 820 825 830
 Asp Gly Glu Thr Arg Glu Ile Pro Val Arg Lys Glu Lys Ser Ser Thr
 835 840 845
 Val Leu Thr Gly Leu Arg Pro Gly Val Glu Tyr Thr Val Gln Val Trp
 850 855 860
 Ala Gln Lys Gly Ala Arg Glu Ser Lys Lys Ala Lys Thr Lys Ala Pro
 865 870 875 880
 Thr Glu Ile Asp Ser Pro Lys Asn Leu Val Thr Asn Arg Val Thr Glu
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 Asn Thr Ala Thr Ile Ser Trp Asp Pro Val Arg Ala Asn Ile Asp Arg
 900 905 910
 Tyr Met Val Arg Tyr Thr Ser Ala Asp Gly Glu Thr Lys Glu Ile Pro
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 Val Ser Lys Asp Gln Ser Asn Thr Ile Leu Thr Gly Leu Lys Pro Gly
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 Leu Arg Pro Phe Gly Val Thr His Ser Gly Gly Val Leu Thr Trp Leu
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 1025 1030 1035
 Leu Val Ala Phe Lys Gly Asn Gln Arg Ser Arg Thr Val Ser Thr
 1040 1045 1050
 Thr Leu Ser Thr Val Asp Ala Arg Phe Pro His Pro Ser Asp Cys
 1055 1060 1065
 Ser Gln Val Gln Gln Asn Thr Asn Ala Ala Ser Gly Leu Tyr Thr
 1070 1075 1080
 Ile Tyr Leu Asn Gly Asp Ala Ser Arg Pro Met Gln Val Tyr Cys
 1085 1090 1095
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 Asn Thr Gly Gln Leu Asp Phe Phe Lys Arg Trp Arg Ser Tyr Val
 1115 1120 1125
 Glu Gly Phe Gly Asp Pro Met Lys Glu Phe Trp Leu Gly Leu Asp
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 Lys Leu His Asn Leu Thr Thr Gly Thr Thr Thr Arg Tyr Glu Val
 1145 1150 1155
 Arg Ala Asp Leu Gln Thr Phe Asn Glu Ser Ala Tyr Ala Val Tyr
 1160 1165 1170
 Asp Phe Phe Gln Val Ala Ser Ser Lys Glu Arg Tyr Lys Leu Ser
 1175 1180 1185
 Val Gly Lys Tyr Arg Gly Thr Ala Gly Asp Ala Leu Thr Tyr His
 1190 1195 1200
 Asn Gly Trp Lys Phe Thr Thr Phe Asp Arg Asp Ser Asp Ile Ala
 1205 1210 1215
 Leu Ser Asn Cys Ala Leu Thr His His Gly Gly Trp Trp Tyr Lys
 1220 1225 1230
 Asn Cys His Leu Ala Asn Pro Asn Gly Lys Tyr Gly Glu Thr Lys
 1235 1240 1245
 His Ser Glu Gly Val Asn Trp Glu Pro Trp Lys Gly His Glu Phe
 1250 1255 1260
 Ser Ile Pro Tyr Val Glu Leu Lys Ile Arg Pro Phe Gly Tyr Ser
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 Arg Asp Arg Phe Ser Gly Arg Lys Lys Arg Ser Ile Gly Lys Ala
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 Arg Met Phe
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SEQUENCE LISTING.txt

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 Ala Ser Ala Pro Ala Thr Leu Glu Pro Pro Gly Cys Ser Asn Lys Glu
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 caa cag gtc act gtc agc cac acc tac aag atc gat gtg ccc aag tct 144
 Gln Gln Val Thr Val Ser His Thr Tyr Lys Ile Asp Val Pro Lys Ser
 35 40 45
 gcc ttg gtt cag gtt gac gct gac cct cag ccc ctc agt gac gat ggg 192
 Ala Leu Val Gln Val Asp Ala Asp Pro Gln Pro Leu Ser Asp Asp Gly
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 gct tcg ctc ttg gcc ctg ggg gag gcc agg gag gaa cag aac atc atc 240
 Ala Ser Leu Leu Ala Leu Gly Glu Ala Arg Glu Glu Gln Asn Ile Ile
 65 70 75 80
 ttc agg cac aac atc cgc ctt cag acg cca cag aag gac tgc gag ttg 288
 Phe Arg His Asn Ile Arg Leu Gln Thr Pro Gln Lys Asp Cys Glu Leu
 85 90 95
 gca ggc agt gtc cag gac ctc ctg gcc cgg gtg aag aag ctg gag gaa 336
 Ala Gly Ser Val Gln Asp Leu Leu Ala Arg Val Lys Lys Leu Glu Glu
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 gag atg gtg gag atg aag gaa cag tgt agt gcc cag cgc tgc tgc cag 384
 Glu Met Val Glu Met Lys Glu Gln Cys Ser Ala Gln Arg Cys Cys Gln
 115 120 125
 gga gtc act gat cta agc cgc cac tgc agc ggc cac ggg acc ttc tcc 432
 Gly Val Thr Asp Leu Ser Arg His Cys Ser Gly His Gly Thr Phe Ser
 130 135 140
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 Leu Glu Thr Cys Ser Cys His Cys Glu Glu Gly Arg Glu Gly Pro Ala
 145 150 155 160

SEQUENCE LISTING.txt

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Cys Glu Arg Leu Ala 165 Cys Pro Gly Ala Cys 170 Ser Gly His Gly Arg 175	
gtg gac ggg cgc tgc ctg tgc cat gag ccc tac gtg ggt gcc gac tgc	576
Val Asp Gly Arg 180 Cys Leu Cys His Glu 185 Pro Tyr Val Gly Ala 190 Asp Cys	
ggc tac ccg gcc tgc cct gag aac tgc agc gga cac ggc gag tgc gtg	624
Gly Tyr Pro 195 Ala Cys Pro Glu Asn 200 Cys Ser Gly His 205 Glu Cys Val	
cgc ggc gtg tgc cag tgc cac gaa gac ttc atg tcg gag gac tgc agc	672
Arg Gly Val Cys Gln Cys His 215 Glu Asp Phe Met Ser 220 Glu Asp Cys Ser	
gag aag cgc tgt ccc ggc gac tgc agc ggc cac ggc ttc tgt gac acg	720
Glu Lys Arg Cys Pro Gly 230 Asp Cys Ser Gly His 235 Gly Phe Cys Asp Thr 240	
ggc gag tgc tac tgc gag gag ggc ttc aca ggc ctg gac tgt gcc cag	768
Gly Glu Cys Tyr Cys 245 Glu Glu Gly Phe Thr 250 Gly Leu Asp Cys Ala 255 Gln	
gtg gtc acc cca cag ggc ctg cag ctg ctc aag aac acg gag gat tct	816
Val Val Thr Pro 260 Gln Gly Leu Gln Leu Leu Lys Asn Thr 270 Glu Asp Ser	
ctg ctg gtg agc tgg gag ccc tcc agc cag gtg gat cac tac ctc ctc	864
Leu Leu Val Ser Trp Glu Pro Ser Ser Gln Val Asp His Tyr Leu Leu	
agc tac tac ccc ctg ggg aag gag ctc tct ggg aag cag atc caa gtg	912
Ser Tyr Tyr Pro Leu Gly Lys 295 Glu Leu Ser Gly Lys 300 Gln Ile Gln Val	
ccc aag gag cag cac agc tat gag att ctt ggt ttg ctg cct gga acc	960
Pro Lys Glu Gln His Ser Tyr Glu Ile Leu Gly Leu Leu Pro Gly Thr 320	
aag tac ata gtc acc ctg cgt aac gtc aag aat gaa gtt tct agc agc	1008
Lys Tyr Ile Val Thr 325 Leu Arg Asn Val Lys 330 Asn Glu Val Ser 335 Ser	
cca cag cat cta ctt gcc acc aca gac ctt gct gtg ctt ggc act gcc	1056
Pro Gln His Leu Leu Ala Thr Thr Asp Leu Ala Val Leu Gly Thr Ala	
tgg gtg aca gat gag act gag aac tcc ctt gac gtg gag tgg gaa aac	1104
Trp Val Thr 355 Asp Glu Thr Glu Asn 360 Ser Leu Asp Val Glu Trp Glu Asn	
ccc tca act gag gtg gac tac tac aag ctg cga tat ggc ccc atg aca	1152
Pro Ser Thr Glu Val Asp Tyr 375 Tyr Lys Leu Arg Tyr 380 Gly Pro Met Thr	
gga cag gag gta gct gag gtc act gtg ccc aag agc agt gac ccc aag	1200
Gly Gln Glu Val Ala Glu Val Thr Val Pro Lys 395 Ser Ser Asp Pro Lys 400	
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Ser Arg Tyr Asp Ile Thr Gly Leu His Pro Gly Thr Glu Tyr Lys 415 Ile	

SEQUENCE LISTING.txt

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Thr	Val	Val	Pro	Met	Arg	Gly	Glu	Leu	Glu	Gly	Lys	Pro	Ile	Leu	Leu	
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aat	ggc	agg	aca	gaa	att	gac	agt	cca	acc	aat	gtt	gtc	act	gat	cga	1344
Asn	Gly	Arg	Thr	Glu	Ile	Asp	Ser	Pro	Thr	Asn	Val	Val	Thr	Asp	Arg	
		435					440					445				
gtg	act	gaa	gac	aca	gca	act	gtc	tcc	tgg	gac	cca	gtg	cag	gct	gtc	1392
Val	Thr	Glu	Asp	Thr	Ala	Thr	Val	Ser	Trp	Asp	Pro	Val	Gln	Ala	Val	
	450					455					460					
ata	gac	aag	tat	gta	gtg	cgc	tac	act	tct	gct	gat	ggg	gac	acc	aag	1440
Ile	Asp	Lys	Tyr	Val	Val	Arg	Tyr	Thr	Ser	Ala	Asp	Gly	Asp	Thr	Lys	
	465				470					475					480	
gaa	atg	gca	gtg	cac	aag	gat	gag	agc	agc	act	gtc	ctg	acg	ggc	ctg	1488
Glu	Met	Ala	Val	His	Lys	Asp	Glu	Ser	Ser	Thr	Val	Leu	Thr	Gly	Leu	
				485				490						495		
aag	cca	gga	gag	gca	tac	aag	gtc	tac	gtg	tgg	gct	gaa	agg	ggc	aac	1536
Lys	Pro	Gly	Glu	Ala	Tyr	Lys	Val	Tyr	Val	Trp	Ala	Glu	Arg	Gly	Asn	
			500					505					510			
cag	ggg	agc	aag	aaa	gct	gac	acc	aat	gcc	ctc	aca	gaa	att	gac	agc	1584
Gln	Gly	Ser	Lys	Lys	Ala	Asp	Thr	Asn	Ala	Leu	Thr	Glu	Ile	Asp	Ser	
		515					520					525				
cca	gca	aac	ctg	gtg	act	gac	cgg	gtg	act	gag	aat	acc	gcc	acc	atc	1632
Pro	Ala	Asn	Leu	Val	Thr	Asp	Arg	Val	Thr	Glu	Asn	Thr	Ala	Thr	Ile	
		530				535					540					
tcc	tgg	gac	ccg	gta	cag	gcc	acc	att	gac	aag	tac	gtg	gtg	cgc	tac	1680
Ser	Trp	Asp	Pro	Val	Gln	Ala	Thr	Ile	Asp	Lys	Tyr	Val	Val	Arg	Tyr	
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acc	tct	gct	gac	gac	caa	gag	acc	aga	gag	gtt	ctg	gtg	ggg	aag	gag	1728
Thr	Ser	Ala	Asp	Asp	Gln	Glu	Thr	Arg	Glu	Val	Leu	Val	Gly	Lys	Glu	
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Gln	Ser	Ser	Thr	Val	Leu	Thr	Gly	Leu	Arg	Pro	Gly	Val	Glu	Tyr	Thr	
			580					585					590			
gtg	cat	gtc	tgg	gcc	cag	aag	ggg	gac	cga	gag	agc	aag	aag	gct	gac	1824
Val	His	Val	Trp	Ala	Gln	Lys	Gly	Asp	Arg	Glu	Ser	Lys	Lys	Ala	Asp	
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acc	aac	gcc	ccg	aca	gat	att	gac	agc	ccc	aaa	aac	ctg	gtg	act	gac	1872
Thr	Asn	Ala	Pro	Thr	Asp	Ile	Asp	Ser	Pro	Lys	Asn	Leu	Val	Thr	Asp	
		610				615					620					
cgg	gtg	aca	gag	aat	atg	gcc	acg	gtc	tcc	tgg	gac	ccg	gtg	cag	gcc	1920
Arg	Val	Thr	Glu	Asn	Met	Ala	Thr	Val	Ser	Trp	Asp	Pro	Val	Gln	Ala	
					630					635					640	
gcc	att	gac	aag	tac	gtg	gtg	cgc	tac	acc	tct	gct	ggt	gga	gag	acc	1968
Ala	Ile	Asp	Lys	Tyr	Val	Val	Arg	Tyr	Thr	Ser	Ala	Gly	Gly	Glu	Thr	
				645					650					655		
agg	gag	gtt	ccg	gtg	ggg	aag	gag	cag	agc	agc	aca	gtc	ctg	aca	ggc	2016
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SEQUENCE LISTING.txt

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agc ccc caa aac ctg gtg acc gac cgg gtg aca gag aat atg gcc act Ser Pro Gln Asn Leu Val Thr Asp Arg Val Thr Glu Asn Met Ala Thr 705 710 715 720			2160
gtc tcc tgg gac ccg gtg cgg gcc acc att gac agg tat gtg gtg cgc Val Ser Trp Asp Pro Val Arg Ala Thr Ile Asp Arg Tyr Val Val Arg 725 730 735			2208
tac acc tct gcc aag gac gga gag acc agg gag gtt ccg gtg ggg aag Tyr Thr Ser Ala Lys Asp Gly Glu Thr Arg Glu Val Pro Val Gly Lys 740 745 750			2256
gag cag agt agc act gtc ctg acg ggc ctg agg ccg ggt gtg gag tac Glu Gln Ser Ser Thr Val Leu Thr Gly Leu Arg Pro Gly Val Glu Tyr 755 760 765			2304
acg gtg cac gtg tgg gcc cag aag ggg gcc cag gag agc aag aag gct Thr Val His Val Trp Ala Lys Gly Ala Gln Glu Ser Lys Lys Ala 770 775 780			2352
gac acc aag gcc cag aca gac att gac agc ccc caa aac ctg gtc act Asp Thr Lys Ala Gln Thr Asp Ile Asp Ser Pro Gln Asn Leu Val Thr 785 790 795 800			2400
gac tgg gtg aca gag aat aca gcc act gtc tcc tgg gac ccg gtg cag Asp Trp Val Thr Glu Asn Thr Ala Thr Val Ser Trp Asp Pro Val Gln 805 810 815			2448
gcc acc att gac agg tat gtg gtg cac tac acg tct gcc aac gga gag Ala Thr Ile Asp Arg Tyr Val Val His Tyr Thr Ser Ala Asn Gly Glu 820 825 830			2496
acc agg gag gtt cca gtg ggg aag gag cag agc agc act gtc ctg acg Thr Arg Glu Val Pro Val Gly Lys Glu Gln Ser Ser Thr Val Leu Thr 835 840 845			2544
ggc ctg agg ccg ggc atg gag tac acg gtg cac gtg tgg gcc cag aag Gly Leu Arg Pro Gly Met Glu Tyr Thr Val His Val Trp Ala Gln Lys 850 855 860			2592
ggg aac cag gag agc aag aag gct gac acc aag gcc cag aca gaa att Gly Asn Gln Glu Ser Lys Lys Ala Asp Thr Lys Ala Gln Thr Glu Ile 865 870 875 880			2640
gac ggc ccc aaa aac cta gtg act gac tgg gtg acg gag aat atg gcc Asp Gly Pro Lys Asn Leu Val Thr Asp Trp Val Thr Glu Asn Met Ala 885 890 895			2688
act gtc tcc tgg gac ccg gtt cag gcc acc att gac aag tac atg gtg Thr Val Ser Trp Asp Pro Val Gln Ala Thr Ile Asp Lys Tyr Met Val 900 905 910			2736
cgc tac acc tct gct gac gga gag acc agg gag gtt ccg gtg ggg aag			2784

SEQUENCE LISTING.txt

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atg	gtg	cac	gtg	tgg	gcc	cag	aag	ggg	gcc	cag	gag	agc	aag	aag	gct	2880	
Met	Val	His	Val	Trp	Ala	Gln	Lys	Gly	Ala	Gln	Glu	Ser	Lys	Lys	Ala		
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Asp	Thr	Lys	Ala	Gln	Thr	Glu	Leu	Asp	Pro	Pro	Arg	Asn	Leu	Arg	Pro		
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Ser	Ala	Val	Thr	Gln	Ser	Gly	Gly	Ile	Leu	Thr	Trp	Thr	Pro	Pro	Ser		
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gct	cag	atc	cac	ggc	tac	att	ctg	act	tac	cag	ttc	cca	gat	ggc	aca	3024	
Ala	Gln	Ile	His	Gly	Tyr	Ile	Leu	Thr	Tyr	Gln	Phe	Pro	Asp	Gly	Thr		
		995					1000					1005					
gtt	aag	gag	atg	cag	ctg	gga	cgg	gaa	gac	cag	agg	ttt	gcg	ttg		3069	
Val	Lys	Glu	Met	Gln	Leu	Gly	Arg	Glu	Asp	Gln	Arg	Phe	Ala	Leu			
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Gln	Gly	Leu	Glu	Gln	Gly	Ala	Thr	Tyr	Pro	Val	Ser	Leu	Val	Ala			
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ttt	aag	ggt	ggt	cgc	cgg	agc	aga	aat	gta	tcc	acc	acc	ctc	tcc		3159	
Phe	Lys	Gly	Gly	Arg	Arg	Ser	Arg	Asn	Val	Ser	Thr	Thr	Leu	Ser			
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Thr	Val	Gly	Ala	Arg	Phe	Pro	His	Pro	Ser	Asp	Cys	Ser	Gln	Val			
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Gln	Gln	Asn	Ser	Asn	Ala	Ala	Ser	Gly	Leu	Tyr	Thr	Ile	Tyr	Leu			
	1070					1075					1080						
cat	ggc	gat	gcc	agc	cgg	ccc	ctg	cag	gtg	tac	tgt	gac	atg	gaa		3294	
His	Gly	Asp	Ala	Ser	Arg	Pro	Leu	Gln	Val	Tyr	Cys	Asp	Met	Glu			
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acg	gac	gga	ggt	ggc	tgg	att	gtc	ttc	cag	agg	cgg	aac	act	ggg		3339	
Thr	Asp	Gly	Gly	Gly	Trp	Ile	Val	Phe	Gln	Arg	Arg	Asn	Thr	Gly			
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cag	ctg	gat	ttc	ttc	aag	cga	tgg	agg	agc	tat	gtg	gaa	ggc	ttt		3384	
Gln	Leu	Asp	Phe	Phe	Lys	Arg	Trp	Arg	Ser	Tyr	Val	Glu	Gly	Phe			
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ggg	gac	ccc	atg	aag	gag	ttc	tgg	ctt	gga	ctt	gac	aag	cta	cac		3429	
Gly	Asp	Pro	Met	Lys	Glu	Phe	Trp	Leu	Gly	Leu	Asp	Lys	Leu	His			
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aac	ctc	acc	acc	ggc	act	cca	gcg	cgg	tat	gag	gtg	aga	gtg	gat		3474	
Asn	Leu	Thr	Thr	Gly	Thr	Pro	Ala	Arg	Tyr	Glu	Val	Arg	Val	Asp			
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SEQUENCE LISTING.txt

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Gln Val Ala Ser Ser Lys Glu Arg Tyr Lys Leu Thr Val Gly Lys	
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tac aga ggc acg gca ggg gat gct ctt act tac cac aat gga tgg	3609
Tyr Arg Gly Thr Ala Gly Asp Ala Leu Thr Tyr His Asn Gly Trp	
1190 1195 1200	
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Lys Phe Thr Thr Phe Asp Arg Asp Asn Asp Ile Ala Leu Ser Asn	
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tgt gcc ctg aca cat cat ggt ggc tgg tgg tat aag aac tgc cac	3699
Cys Ala Leu Thr His His Gly Gly Trp Trp Tyr Lys Asn Cys His	
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ttg gcc aac cct aat ggc aga tat ggg gag acc aag cac agt gag	3744
Leu Ala Asn Pro Asn Gly Arg Tyr Gly Glu Thr Lys His Ser Glu	
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Gly Val Asn Trp Glu Pro Trp Lys Gly His Glu Phe Ser Ile Pro	
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tac gtg gag ttg aaa atc cgc cct cat ggc tac agc agg gag cct	3834
Tyr Val Glu Leu Lys Ile Arg Pro His Gly Tyr Ser Arg Glu Pro	
1265 1270 1275	
gtc ctg ggc aga aag aag cgg acg ctg aga gga agg ctg cga acg	3879
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ttc tga	3885
Phe	

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<212> PRT

<213> homo sapiens

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Gln Gln Val Thr Val Ser His Thr Tyr Lys Ile Asp Val Pro Lys Ser	
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Ala Leu Val Gln Val Asp Ala Asp Pro Gln Pro Leu Ser Asp Asp Gly	
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SEQUENCE LISTING.txt

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 Phe Arg His Asn Ile Arg Leu Gln Thr Pro Gln Lys Asp Cys Glu Leu
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 Ala Gly Ser Val Gln Asp Leu Leu Ala Arg Val Lys Lys Leu Glu Glu
 100 105 110
 Glu Met Val Glu Met Lys Glu Gln Cys Ser Ala Gln Arg Cys Cys Gln
 115 120 125
 Gly Val Thr Asp Leu Ser Arg His Cys Ser Gly His Gly Thr Phe Ser
 130 135 140
 Leu Glu Thr Cys Ser Cys His Cys Glu Glu Gly Arg Glu Gly Pro Ala
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 Cys Glu Arg Leu Ala Cys Pro Gly Ala Cys Ser Gly His Gly Arg Cys
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 Gly Tyr Pro Ala Cys Pro Glu Asn Cys Ser Gly His Gly Glu Cys Val
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 Arg Gly Val Cys Gln Cys His Glu Asp Phe Met Ser Glu Asp Cys Ser
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 Glu Lys Arg Cys Pro Gly Asp Cys Ser Gly His Gly Phe Cys Asp Thr
 225 230 235 240
 Gly Glu Cys Tyr Cys Glu Glu Gly Phe Thr Gly Leu Asp Cys Ala Gln
 245 250 255
 Val Val Thr Pro Gln Gly Leu Gln Leu Leu Lys Asn Thr Glu Asp Ser
 260 265 270
 Leu Leu Val Ser Trp Glu Pro Ser Ser Gln Val Asp His Tyr Leu Leu
 275 280 285
 Ser Tyr Tyr Pro Leu Gly Lys Glu Leu Ser Gly Lys Gln Ile Gln Val
 290 295 300
 Pro Lys Glu Gln His Ser Tyr Glu Ile Leu Gly Leu Leu Pro Gly Thr
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 Lys Tyr Ile Val Thr Leu Arg Asn Val Lys Asn Glu Val Ser Ser Ser
 325 330 335
 Pro Gln His Leu Leu Ala Thr Thr Asp Leu Ala Val Leu Gly Thr Ala
 340 345 350
 Trp Val Thr Asp Glu Thr Glu Asn Ser Leu Asp Val Glu Trp Glu Asn
 355 360 365
 Pro Ser Thr Glu Val Asp Tyr Tyr Lys Leu Arg Tyr Gly Pro Met Thr
 370 375 380
 Gly Gln Glu Val Ala Glu Val Thr Val Pro Lys Ser Ser Asp Pro Lys
 385 390 395 400

SEQUENCE LISTING.txt

Ser Arg Tyr Asp Ile Thr Gly Leu His Pro Gly Thr Glu Tyr Lys Ile
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Thr Val Val Pro Met Arg Gly Glu Leu Glu Gly Lys Pro Ile Leu Leu
420 425 430
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435 440 445
Val Thr Glu Asp Thr Ala Thr Val Ser Trp Asp Pro Val Gln Ala Val
450 455 460
Ile Asp Lys Tyr Val Val Arg Tyr Thr Ser Ala Asp Gly Asp Thr Lys
465 470 475 480
Glu Met Ala Val His Lys Asp Glu Ser Ser Thr Val Leu Thr Gly Leu
485 490 495
Lys Pro Gly Glu Ala Tyr Lys Val Tyr Val Trp Ala Glu Arg Gly Asn
500 505 510
Gln Gly Ser Lys Lys Ala Asp Thr Asn Ala Leu Thr Glu Ile Asp Ser
515 520 525
Pro Ala Asn Leu Val Thr Asp Arg Val Thr Glu Asn Thr Ala Thr Ile
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Ser Trp Asp Pro Val Gln Ala Thr Ile Asp Lys Tyr Val Val Arg Tyr
545 550 555 560
Thr Ser Ala Asp Asp Gln Glu Thr Arg Glu Val Leu Val Gly Lys Glu
565 570 575
Gln Ser Ser Thr Val Leu Thr Gly Leu Arg Pro Gly Val Glu Tyr Thr
580 585 590
Val His Val Trp Ala Gln Lys Gly Asp Arg Glu Ser Lys Lys Ala Asp
595 600 605
Thr Asn Ala Pro Thr Asp Ile Asp Ser Pro Lys Asn Leu Val Thr Asp
610 615 620
Arg Val Thr Glu Asn Met Ala Thr Val Ser Trp Asp Pro Val Gln Ala
625 630 635 640
Ala Ile Asp Lys Tyr Val Val Arg Tyr Thr Ser Ala Gly Gly Glu Thr
645 650 655
Arg Glu Val Pro Val Gly Lys Glu Gln Ser Ser Thr Val Leu Thr Gly
660 665 670
Leu Arg Pro Gly Met Glu Tyr Met Val His Val Trp Ala Gln Lys Gly
675 680 685
Asp Gln Glu Ser Lys Lys Ala Asp Thr Lys Ala Gln Thr Asp Ile Asp
690 695 700
Ser Pro Gln Asn Leu Val Thr Asp Arg Val Thr Glu Asn Met Ala Thr
705 710 715 720
Val Ser Trp Asp Pro Val Arg Ala Thr Ile Asp Arg Tyr Val Val Arg

SEQUENCE LISTING.txt

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Glu Gln Ser Ser Thr Val Leu Thr Gly Leu Arg Pro Gly Val Glu Tyr
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Asp Thr Lys Ala Gln Thr Asp Ile Asp Ser Pro Gln Asn Leu Val Thr
785                               790                               795
Asp Trp Val Thr Glu Asn Thr Ala Thr Val Ser Trp Asp Pro Val Gln
805                               810                               815
Ala Thr Ile Asp Arg Tyr Val Val His Tyr Thr Ser Ala Asn Gly Glu
820                               825                               830
Thr Arg Glu Val Pro Val Gly Lys Glu Gln Ser Ser Thr Val Leu Thr
835                               840                               845
Gly Leu Arg Pro Gly Met Glu Tyr Thr Val His Val Trp Ala Gln Lys
850                               855                               860
Gly Asn Gln Glu Ser Lys Lys Ala Asp Thr Lys Ala Gln Thr Glu Ile
865                               870                               875                               880
Asp Gly Pro Lys Asn Leu Val Thr Asp Trp Val Thr Glu Asn Met Ala
885                               890                               895
Thr Val Ser Trp Asp Pro Val Gln Ala Thr Ile Asp Lys Tyr Met Val
900                               905                               910
Arg Tyr Thr Ser Ala Asp Gly Glu Thr Arg Glu Val Pro Val Gly Lys
915                               920                               925

Glu His Ser Ser Thr Val Leu Thr Gly Leu Arg Pro Gly Met Glu Tyr
930                               935                               940
Met Val His Val Trp Ala Gln Lys Gly Ala Gln Glu Ser Lys Lys Ala
945                               950                               955                               960
Asp Thr Lys Ala Gln Thr Glu Leu Asp Pro Pro Arg Asn Leu Arg Pro
965                               970                               975
Ser Ala Val Thr Gln Ser Gly Gly Ile Leu Thr Trp Thr Pro Pro Ser
980                               985                               990

Ala Gln Ile His Gly Tyr Ile Leu Thr Tyr Gln Phe Pro Asp Gly Thr
995                               1000                               1005

Val Lys Glu Met Gln Leu Gly Arg Glu Asp Gln Arg Phe Ala Leu
1010                               1015                               1020
Gln Gly Leu Glu Gln Gly Ala Thr Tyr Pro Val Ser Leu Val Ala
1025                               1030                               1035
Phe Lys Gly Gly Arg Arg Ser Arg Asn Val Ser Thr Thr Leu Ser
1040                               1045                               1050

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SEQUENCE LISTING.txt

Thr	Val	Gly	Ala	Arg	Phe	Pro	His	Pro	Ser	Asp	Cys	Ser	Gln	Val
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Gln	Gln	Asn	Ser	Asn	Ala	Ala	Ser	Gly	Leu	Tyr	Thr	Ile	Tyr	Leu
1070						1075					1080			
His	Gly	Asp	Ala	Ser	Arg	Pro	Leu	Gln	Val	Tyr	Cys	Asp	Met	Glu
1085						1090					1095			
Thr	Asp	Gly	Gly	Gly	Trp	Ile	Val	Phe	Gln	Arg	Arg	Asn	Thr	Gly
1100						1105					1110			
Gln	Leu	Asp	Phe	Phe	Lys	Arg	Trp	Arg	Ser	Tyr	Val	Glu	Gly	Phe
1115						1120					1125			
Gly	Asp	Pro	Met	Lys	Glu	Phe	Trp	Leu	Gly	Leu	Asp	Lys	Leu	His
1130						1135					1140			
Asn	Leu	Thr	Thr	Gly	Thr	Pro	Ala	Arg	Tyr	Glu	Val	Arg	Val	Asp
1145						1150					1155			
Leu	Gln	Thr	Ala	Asn	Glu	Ser	Ala	Tyr	Ala	Ile	Tyr	Asp	Phe	Phe
1160						1165					1170			
Gln	Val	Ala	Ser	Ser	Lys	Glu	Arg	Tyr	Lys	Leu	Thr	Val	Gly	Lys
1175						1180					1185			
Tyr	Arg	Gly	Thr	Ala	Gly	Asp	Ala	Leu	Thr	Tyr	His	Asn	Gly	Trp
1190						1195					1200			
Lys	Phe	Thr	Thr	Phe	Asp	Arg	Asp	Asn	Asp	Ile	Ala	Leu	Ser	Asn
1205						1210					1215			
Cys	Ala	Leu	Thr	His	His	Gly	Gly	Trp	Trp	Tyr	Lys	Asn	Cys	His
1220						1225					1230			
Leu	Ala	Asn	Pro	Asn	Gly	Arg	Tyr	Gly	Glu	Thr	Lys	His	Ser	Glu
1235						1240					1245			
Gly	Val	Asn	Trp	Glu	Pro	Trp	Lys	Gly	His	Glu	Phe	Ser	Ile	Pro
1250						1255					1260			
Tyr	Val	Glu	Leu	Lys	Ile	Arg	Pro	His	Gly	Tyr	Ser	Arg	Glu	Pro
1265						1270					1275			
Val	Leu	Gly	Arg	Lys	Lys	Arg	Thr	Leu	Arg	Gly	Arg	Leu	Arg	Thr
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Phe

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SEQUENCE LISTING.txt

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